4.0 DISCOVERY REPORT

4.1 Building Tenants Survey

As one of the components of the Wallace State Office Building Discovery Report, Wallace Building critical stakeholders were surveyed by AMEC. Past and future tenants, and maintenance personnel, were asked about issues or concerns with the building, needs and wants for a building, and how the Wallace Building has served their requirements.

Of those surveyed, their comments and concerns about the building fell into several major categories—HVAC and air quality, electrical, building population, and building infrastructure and systems.

- Temperature control is not acceptable.
- Air flow quantity and quality is not acceptable.
- Indoor air quality is not acceptable.
- Electrical service to building is not acceptable.
- Number of occupants is too high for the size of the building.
- Problems exist with the building infrastructure and systems.

It is noted that the issues resulting from the existing HVAC and air quality systems in the Wallace Building are not the primary fault of the Wallace Building maintenance group. System limitations in the building mechanical systems are the core problem for existing HVAC system issues present in the building.

Additional comments within the six categories mentioned above, along with a list of people surveyed, is included in this report as Appendix A.

4.2 Environmental Study

4.2.1 Overview To Environmental Assessment Report

AMEC performed an environmental inspection of the Wallace Office Building in Des Moines, Iowa. The purpose of the inspection was to determine whether or not hazardous materials were present in the building, including materials such as asbestos, lead (including lead-based paint), PCBs, mercury, or any other hazardous material that could affect the disposal costs following either renovation or demolition of the building.

Potential sources of mercury, lead, polychlorinated biphenyls (PCBs), chlorinated fluorocarbons (CFCs), and asbestos were observed at the Wallace Office Building. If these items are disposed of, there may be special handling and disposal requirements that need to be followed.

4.2.2 Definition Of "Phase 1 Plus" Environmental Study

A Phase I environmental study includes:

1. A review of historical site records (maps, airphotos, property records, regulatory agency databases, etc.),

2. Conducting a site visit to look for potential environmental problems (stained soil, evidence of old tanks, leaks, spills, asbestos, etc.), and

3. Conducting interviews with site personnel to establish whether or not there may be any environmental issues associated with past or present activities at the site.

There is typically no sampling of environmental media done during a standard Phase I environmental study.

A Phase I Plus environmental study frequently includes some sampling and analytical testing conducted along with the Phase I study.

AMEC tailored the Phase I Plus environmental study to the needs of the Wallace Building project. AMEC's scope included a pre-demolition inspection to determine the presence or absence of hazardous materials or hazardous waste with regards to demolition or renovation, and sampling for lead and asbestos based on what was observed in the field.

4.2.3 Background To Environmental Study

AMEC's inspection scope was to verify the presence or absence of hazardous materials that could affect the cost of renovation or demolition of the building. If it appeared that nothing was hazardous via visual inspection, that would be sufficient and no samples would be required (except for the indoor firing range). If it appeared that hazardous materials were present, sampling was done to confirm the presence or absence of these materials. In some cases (mercury thermostats or fluorescent lights, for example), it was not necessary to sample for contaminants. If it was obvious that mercury was present, its presence was noted.

AMEC's scope did not include collecting any samples from potential hazardous materials associated with the operation of the laboratory or laboratories.

A full copy of the environmental inspection report, the asbestos sample data, and the lead sampling test results are included as Appendix D.

4.2.4 Polychlorinated Biphenyls (PCBs)

The only potential PCB-containing items identified in the building were the fluorescent light ballasts. Further investigation is warranted.

PCBs are regulated by EPA under the Toxic Substances Control Act (TSCA). If PCBs are detected at a concentration above 50 parts per million (ppm) in a material to be disposed of, the material must be handled as a TSCA remediation waste.

4.2.5 Mercury

There were a number of potential mercury-containing items identified, including fluorescent lights, smoke detectors, thermostats, high intensity lights, emergency exit signs, and circuit breaker boxes. The older fluorescent lights probably contain mercury, and the thermostats probably do not. The thermostats can be segregated visually by opening them up to see whether they contain a mercury tube or just a spring. If it cannot be determined visually, it is recommended that these items be dealt with by recycling.

Mercury and lead are regulated by the Environmental Protection Agency (EPA) under the Resource Conservation and Recovery Act (RCRA). If mercury and / or lead are detected at concentrations above their toxicity characteristic limit in material to be disposed of, the material must be handled as a characteristic hazardous waste. The toxicity characteristic limit for lead is 5.0 milligrams per liter (mg/l), and the toxicity characteristic limit for mercury is 0.2 mg/L.

4.2.6 Lead

At the indoor firing range, the lead samples taken indicate that the lead contamination is confined to the firing range itself. Both wipe samples taken inside the firing range exceeded the 40 microgram concentration that is considered to be the cut-off for lead contamination in wipe samples. However, the wipe sample taken on the wall just outside the firing range was below 40 micrograms of lead. No lead was detected in paint samples taken inside the building.

4.2.7 Refrigerant Chlorofluorocarbons (CFCs)

Potential sources of CFCs within structures include fire extinguishers, air conditioners, refrigerators, chillers, heat pumps, and so on. Within the Wallace Building, there are fire extinguishers, coolers, water fountains, refrigerators, freezers, vending machines, and a drying cabinet found, all of which could potentially be CFC sources. These items have been identified in the environmental report. If any of this equipment is removed, proper recycling of any CFCs is required.

CFCs are regulated by the EPA under the Clean Air Act (CAA). The CAA provides requirements for servicing and disposal of air-conditioning and refrigeration equipment to minimize the release of such refrigerants to the atmosphere during servicing or disposal.

4.2.8 Asbestos

Asbestos-containing materials (ACM) were identified within the building. Both friable and non-friable ACM were found. Regulations exist with regard to removal and disposal of ACM. It is recommended that a state certified asbestos abatement contractor remove the materials prior to any demolition activities.

Asbestos is regulated by the EPA under the CAA National Emissions standard for Hazardous Air Pollutants (NESHAPS), which provides work practices to be followed during demolitions and renovations of all buildings to minimize the release of asbestos fibers during activities involving the processing, handling, and disposal of asbestos-containing material (ACM). In addition, the TSCA Asbestos Hazard Emergency Removal Act (AHERA) specifies additional requirements for schools when dealing with potential ACM.

Per the Environmental Protection Agency, at http://www.epa.gov/asbestos/:

“Asbestos is not always an immediate hazard. In fact, if asbestos can be maintained in good condition, it is recommended that it be left alone and periodic surveillance performed to monitor its condition. It is only when asbestos containing materials (ACM) are disturbed or the materials become damaged that it becomes a hazard. When the materials become damaged, the fibers separate and may then become airborne. In the asbestos industry, the term ‘friable’ is used to describe asbestos that can be reduced to dust by hand pressure. ‘Non-friable’ means asbestos that is too hard to be reduced to dust by hand. Non-friable materials, such as transite siding and floor tiles are not regulated provided it does not become friable. Machine grinding, sanding and dry-buffing are ways of causing non-friable materials to become friable.”

4.3 Indoor Air Quality Assessment

AMEC performed an indoor air quality (IAQ) assessment at the Wallace State Office Building on 10 November 2004.

The purpose of the IAQ evaluation was to assess current IAQ conditions and determine if there were any significant health hazards to workers who occupy the building. The assessment focused on three primary areas:

- Evaluating potential sources of airborne contaminants: particulate matter (PM), volatile organic compounds (VOCs), and formaldehyde,
- Evaluating potential amplification of fungal spores in the indoor air, and
- Monitoring trends of carbon dioxide (CO_2), carbon monoxide (CO), temperature, and relative humidity that are indicators of ventilation effectiveness or general comfort conditions in the building.

4.3.1 Major Findings Of IAQ Assessment

An overview of study findings is listed below. See Appendix E for the full, detailed report.

- No potential sources of air contaminants were identified in the Wallace State Office Building that would be considered significant health hazards to building occupants. The air sampling results indicate generally good indoor air quality.
- The analytical results for particulate matter (PM), volatile organic compounds (VOCs), and formaldehyde indicate airborne concentrations were below recommended guidelines for office buildings.
- The laboratory analytical data obtained for fungal spores showed no evidence of indoor microbial amplification, as airborne concentrations measured indoors were less than those measured outside at the fresh air intakes to the heating, ventilating, and air conditioning (HVAC) systems.
- The monitoring results on this date for carbon dioxide (CO_2), carbon monoxide (CO), temperature, and relative humidity were consistent with recommended ASHRAE guidelines.